More Ch. 7:

- Correlation
  - We want to standardize values so that we can compare variables
  - This is why we learned how to do z-scores
  - Correlation coefficient:

$$r = \frac{\sum z_x z_y}{n-1}$$

r = correlation coefficient

$\sum$ = sum of

z_x = z-score of x-value

z_y = z-score of y-value

$n-1$ = number of terms − 1

- Correlation Properties:
  - Sign gives direction of association
  - Correlation is always between +1 and -1
  - Correlation is commutative.

    Correlation of x and y is same as y and x.
  - Correlation has no units.
  - Correlation is not affected by graph shifts or scaling.
  - Correlation measures the linear association between two variables.
  - Correlation is sensitive to outliers.

Look at scatterplot to see what is going on!

- Worksheet p. 7~11:

1. 0.67
2. -0.67
3. 0.01
4. -0.73
5. 0.22
6. 0.45
7. Type #'s into L1, L2

   Statplot (2nd: Y=)

   (1st one)

   On

   X List → L1 (press 2nd → L1)

   Y List → L2 (press 2nd → L2)

Graph

Zoom → 9: ZoomStat

Set A is linear, so we can find a correlation coefficient for the data.

Set B has a curved form, so we cannot find a correlation coefficient.

- Correlation measures strength of linear association between two quantitative variables.
- Conditions to check:
  - Quantitative Variable Condition
  - Straight Enough Condition
  - Outlier Condition